Warm Up # 3-1

1. $(a+b)^2$= 2. $(a+b)^3$= 3. $(a+b)^4$=

4. Pascal's Triangle. Complete the next 2 rows of the pattern.

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

5. Predict $(a+b)^5$ =

HW Questions:

6A p.160 # 1 & 2 (i - m)

1 Classify the following variables as categorical, quantitative discrete, or quantitative continuous:

i the amount of water a person drinks each day

j the number of hours spent per week at work

k the average temperatures of various cities

l the items students ate for breakfast before coming to school

m the number of televisions in each house.

6B p.165 # 2

2 Prince Edward High School prides itself on the behaviour of its students. However, from time to time they do things they should not, and as a result are placed on detention. The studious school master records the number of students on detention each week throughout the year:

0	2	1	5	0	1	4	2	3	1
4	3	0	2	9	2	1	5	0	3
6	4	2	1	5	1	0	2	1	4
3	1	2	0	4	3	2	1	2	3

a Construct a column graph to display the data.

b What is the modal number of students on detention in a week?

c Describe the distribution of the data, including the presence of outliers.

d In what percentage of weeks were more than 4 students on detention?

6C p.167 # 3

3 A city council does a survey of the number of houses per street in a suburb.

42	15	20	6	34	19	8	5	11	38	56	23	24	24
35	47	22	36	39	18	14	44	25	6	34	35	28	12
27	32	36	34	30	40	32	12	17	6	37	32		

a Construct a frequency table for this data using class intervals 0 - 9, 10 - 19, ..., 50 - 59.

b Hence draw a column graph to display the data.

c Write down the modal class.

d What percentage of the streets contain at least 20 houses?

6I.1 p.199 # 4

4 The heights in cm of seven junior footballers are: 179, 164, 159, 171, 168, 168, 174.

a Find the mean and standard deviation for this group.

b When measured one year later, each footballer had grown by exactly 5 cm. Find the new mean and standard deviation.

c Comment on your results in general terms.

→ L_1 to homescreen then press [ENTER]

looks like → {179, 164, 159, ...

Now just [+] 5 [ENTER]

looks like → {184, 169, 164, ...

STO ▸ L_2 [ENTER]

Now you can use 1-Var Stats on your new data ☺

6I.1 p.199 # 6

6 The following table shows the decrease in cholesterol levels in 6 volunteers after a two week tria of special diet and exercise.

Volunteer	A	B	C	D	E	F
Decrease in cholesterol	0.8	0.6	0.7	0.8	0.4	2.8

a Find the standard deviation of the data.
b Which of the data values is an outlier?
c Recalculate the standard deviation with the outlier removed.
d Discuss the effect of an extreme value on the standard deviation.

Classwork: p. 204, Investigation #5

INVESTIGATION 5 HEART STOPPERS

A new drug is claimed to lower the cholesterol level in humans. To test this claim, a heart specialist enlisted the help of 50 of his patients.

The patients agreed to take part in an experiment in which 25 of them would be randomly allocated to take the new drug and the other 25 would take an identical looking pill that was actually a *placebo* with no effect.

All participants had their cholesterol level measured before starting the course of pills, with the following results:

7.1	8.2	8.4	6.5	6.5	7.1	7.2	7.1	6.1	6.0	8.5	5.0	6.3	6.7	7.3	8.9	6.2
6.3	7.1	8.4	7.4	7.6	7.5	6.6	8.1	6.2	6.2	7.0	8.1	8.4	6.4	7.6	8.6	7.5
7.9	6.2	6.8	7.5	6.0	5.0	8.3	7.9	6.7	7.3	6.0	7.4	7.4	8.6	6.5	7.6	

Two months later, the cholesterol levels of the participants were again measured, but this time they were divided into two groups.

The cholesterol levels of the 25 participants who took the drug were:

4.8	5.6	4.7	4.2	4.8	4.6	4.8	5.2	4.8	5.0	4.7	5.1	4.7
4.4	4.7	4.9	6.2	4.7	4.7	4.4	5.6	3.2	4.4	4.6	5.2	

The cholesterol levels of the 25 participants who took the placebo were:

7.0	8.4	8.8	6.1	6.6	7.6	6.5	7.9	6.2	6.8	7.5	6.0	8.2
5.7	8.3	7.9	6.7	7.3	6.1	7.4	8.4	6.6	6.5	7.6	6.1	

What to do:

1 Use the data to complete the table:

Cholesterol level	*Before the experiment*	*25 participants taking the drug*	*25 participants taking the placebo*
$3.0 \leqslant l < 3.5$			
$3.5 \leqslant l < 4.0$			
$4.0 \leqslant l < 4.5$			
$4.5 \leqslant l < 5.0$			
⋮			
$8.5 \leqslant l < 9.0$			

2 Produce histograms showing the cholesterol levels of the three groups in the table.

3 Calculate the mean and standard deviation for each group in the table.

4 Write a report presenting your findings.

Get organized!

<u>Week 2 HW Quiz tomorrow</u>

Mon: pgs 175, 178, 181, 184, 188

Tues: pgs 169, 181, 190

Wed: pg 195 on a worksheet

Thur: pgs 199, 201

Fri: pgs 160, 165, 167, 199

HW:

6I.3 p. 203, #1-3

Rev. Set 6A p. 206, #1-7

(skip 2&5)

Unit Test: Friday